

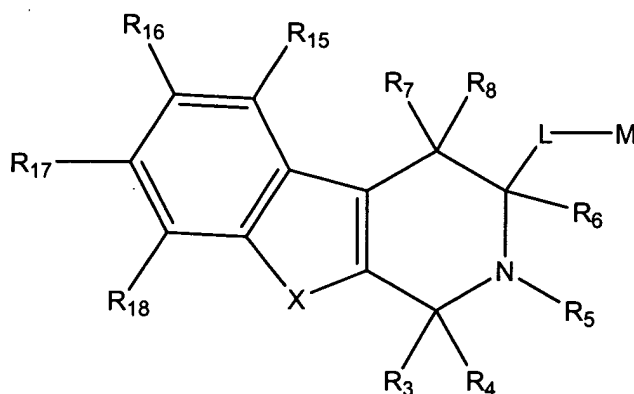
AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application.

Listing Of Claims

1-9 (withdrawn).

10. (presently amended). A compound comprising the formula:



wherein

R₃ and R₄ are each independently selected from a group of substituents comprising a moiety attached to the ring carbon selected from the group consisting of hydrogen, alkyl, aminoalkyl, oxaalkyl, aromatic ring, cyano, a carbonyl group, and a thiocarbonyl group, or where R₃ and R₄ are taken together to form a ring, in each case unsubstituted or further substituted through available valencies;

R₅ is and R₆ are each independently selected from a group of substituents ~~that comprise~~ comprising a moiety attached to the ring nitrogen selected from the group consisting of hydrogen, alkyl, aminoalkyl, oxaalkyl, aromatic ring, cyano, a carbonyl group, a thiocarbonyl group and a sulfonyl group, or where R₅ and R₆ are taken together to form a 3, 4, 5, 6, 7 or 8 membered ring, in each case unsubstituted or further substituted through available valencies;

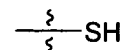
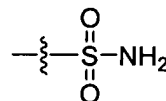
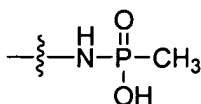
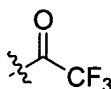
~~R₆ is selected from a group of substituents that comprise a moiety attached to the ring carbon selected from the group consisting of hydrogen, alkyl, aminoalkyl, oxaalkyl, aromatic ring, cyano, a carbonyl group, a thiocarbonyl group and a sulfonyl group;~~

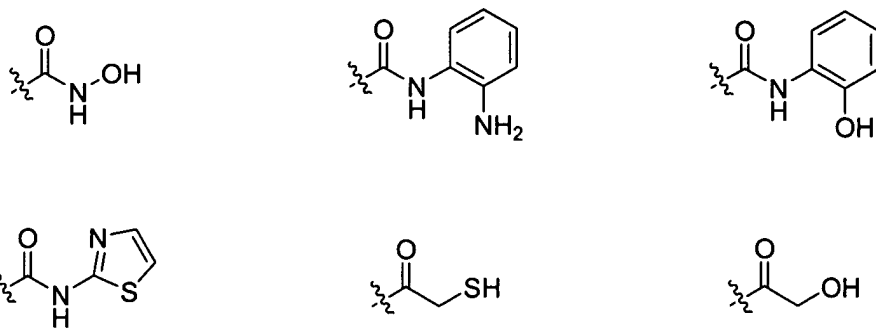
R₇ and R₈ are each independently selected from a group of substituents comprising a moiety attached to the ring carbon selected from the group consisting of hydrogen, alkyl, aminoalkyl, oxaalkyl, aromatic ring, alkoxy, aryloxy, alkylamino, arylamino, alkylthio, arylthio, acylamino, sulfonylamino, nitro, cyano, halogen, hydroxyl, thiol, amino, a carbonyl group, and a thiocarbonyl group, or where R₇ and R₈ are taken together to form a substituent comprising a moiety attached to the ring carbon selected from the group consisting of a carbonyl, thiocarbonyl, imine, alkene and ring, or where R₆ and R₇ are taken together to form a 3, 4, 5, 6, 7 or 8 membered ring, in each case unsubstituted or further substituted through available valencies;

R₁₅, R₁₆, R₁₇ and R₁₈ are each independently selected from a group of substituents comprising a moiety attached to the ring carbon selected from the group consisting of hydrogen, alkyl, aminoalkyl, oxaalkyl, aromatic ring, alkoxy, aryloxy, alkylamino, arylamino, alkylthio, arylthio, acylamino, sulfonylamino, nitro, cyano, halogen, hydroxyl, thiol, amino, a carbonyl group, and a thiocarbonyl group, except where R₁₅ and R₁₆, R₁₆ and R₁₇, and/or R₁₇ and R₁₈ are taken together to form a substituted or unsubstituted 3, 4, 5, 6, 7 or 8 membered ring, in each case unsubstituted or further substituted through available valencies;

X is selected from the group consisting of O, S, and NR₁₄, where R₁₄ comprises a moiety attached to the nitrogen selected from the group consisting of hydrogen, hydroxyl, alkyl, aromatic ring, alkoxy, aryloxy, a carbonyl group, a thiocarbonyl group, and a sulfonyl group, in each case unsubstituted or further substituted through available valencies;

M is a ~~substituent capable of complexing with a protein metal ion~~ selected from the group consisting of:





; and

L is a ~~substituent comprising~~ a substituted or unsubstituted chain of 3-12 atoms connecting the M substituent to the carbon atom alpha to the L substituent.

11-15 (withdrawn)

16. (presently amended). A compound according to claim 10, wherein at least one of R₃ and R₄ is selected from a group of substituents where the moiety attached to the ring carbon is a substituted or unsubstituted C₁- C₁₀ alkyl, aminoalkyl, or oxaalkyl.

17. (presently amended). A compound according to claim 10, wherein at least one of R₃ and R₄ is selected from a group of substituents where the moiety attached to the ring carbon is a substituted or unsubstituted branched C₁- C₁₀ alkyl, aminoalkyl, or oxaalkyl.

18. (original). A compound according to claim 17, wherein the C₁- C₁₀ alkyl, aminoalkyl, or oxaalkyl further comprises a substituent selected from the group consisting of an alkyl, aromatic ring, cyano group, halogen, and carbonyl group.

19. (original). A compound according to claim 17, wherein the C₁- C₁₀ alkyl, aminoalkyl, or oxaalkyl further comprises a substituted or unsubstituted aromatic ring.

20. (presently amended). A compound according to claim 10, wherein at least one of R₃ and R₄ is selected from a group of substituents where the moiety attached to the ring carbon is a substituted or unsubstituted aromatic ring.

21. (presently amended). A compound according to claim 10, wherein at least one of R₃ and R₄ is selected from a group of substituents where ~~where~~ the moiety attached to the ring carbon is a substituted or unsubstituted phenyl ring.

22. (previously amended). A compound according to claim 10, wherein at least one of R₃ and R₄ is selected from a group of substituents where the moiety attached to the ring carbon is a substituted or unsubstituted heteroaryl.

23. (previously amended). A compound according to claim 10, wherein at least one of R₃ and R₄ is selected from a group of substituents where the moiety attached to the ring carbon is a substituted or unsubstituted heteroaryl selected from the group consisting of furan, thiofuran, pyrrole, pyrazole, isoimidazole, triazole, isoxazole, oxazole, thiazole, isothiazole, oxadiazole, oxatriazole, pyridine, pyridazine, pyrimidine, pyrazine, triazine, benzofuran, isobenzofuran, benzothiofuran, isobenzothiofuran, indole, isobenzazole, quinoline, isoquinoline, cinnoline, quinazoline, naphthyridine, and pyridopyridine.

24. (previously amended). A compound according to claim 10, wherein R₃ and R₄ are taken together to form a substituted or unsubstituted 3, 4, 5, 6, 7 or 8 membered ring.

25. (previously amended). A compound according to claim 10, wherein R₃ and R₄ are taken together to form a substituted or unsubstituted 3, 4, 5, 6, 7 or 8 member alicyclic ring.

26. (presently amended). A compound according to claim 10, wherein at least one of R₃ and R₄ is selected from a group of substituents where the moiety attached to the ring carbon is selected from the group consisting of an aldehyde, amide, ester, ketone, and carboxylic acid, each unsubstituted or further substituted through available valencies.

27. (previously amended). A compound according to claim 10, wherein R₅ and R₆ are taken together to form a substituted or unsubstituted 3, 4, 5, 6, 7 or 8 membered ring.

28. (previously amended). A compound according to claim 10, wherein R₅ and R₆ are taken together to form a substituted or unsubstituted 3, 4, 5, 6, 7 or 8 alicyclic ring.

29. (previously amended). A compound according to claim 10, wherein R₆ and R₇ are taken together to form a substituted or unsubstituted 3, 4, 5, 6, 7 or 8 membered ring.

30. (previously amended). A compound according to claim 10, wherein R₆ and R₇ are taken together to form a substituted or unsubstituted 3, 4, 5, 6, 7 or 8 alicyclic ring.

31. (previously amended). A compound according to claim 10, wherein R₇ and R₈ are taken together to form a substituted or unsubstituted 3, 4, 5, 6, 7 or 8 membered ring.

32. (previously amended). A compound according to claim 10, wherein R₇ and R₈ are taken together to form a substituted or unsubstituted 3, 4, 5, 6, 7 or 8 alicyclic ring.

33. (presently amended). A compound according to claim 10, wherein R₇ and R₈ are taken together to form an imine having a substituent R₉ on the imine nitrogen selected from the group consisting of hydrogen, alkyl, aminoalkyl, oxaalkyl, aromatic ring, alkoxy, aryloxy, alkylamino, arylamino, alkylthio, arylthio, acylamino, and sulfonylamino, each unsubstituted or further substituted through available valencies.

34. (presently amended). A compound according to claim 10, wherein R₇ and R₈ are taken together to form an alkene substituent having the formula =CR₁₀R₁₁ where R₁₀ and R₁₁ are each independently selected from a group of substituents consisting of hydrogen, ~~halogen~~, alkyl, aryl, ~~alkoxy~~, ~~aryloxy~~, alkylamino, arylamino, ~~alkylthio~~, ~~arylthio~~, ~~acylamino~~, sulfonylamino, ~~cyano~~, ~~nitro~~, a carbonyl group, thiocarbonyl, and sulfonyl or where R₁₀ and R₁₁ are taken together to form an alkene, each unsubstituted or further substituted through available valencies.

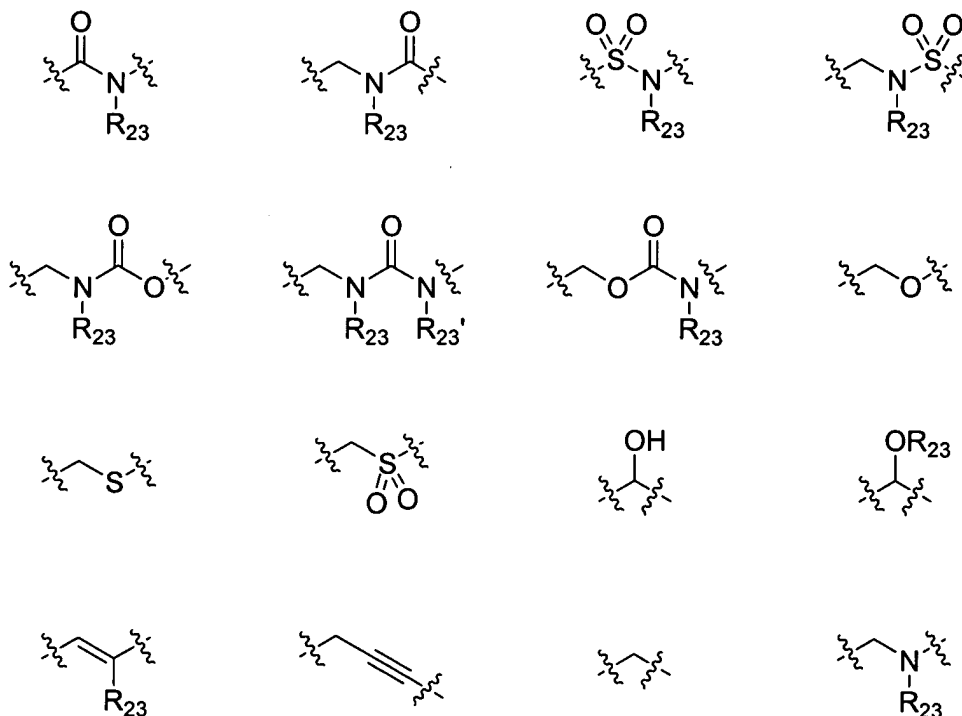
35. (presently amended). A compound according to claim 10, wherein R₇ and R₈ are taken together to form an alkene substituent having the formula =CR₁₀R₁₁ where R₁₀ and R₁₁ are

together together to form a substituted or unsubstituted 3, 4, 5, 6, 7 or 8 membered ring, each unsubstituted or further substituted through available valencies.

36. (original). A compound according to claim 35 wherein R_{10} and R_{11} are taken together to form a substituted or unsubstituted 3, 4, 5, 6, 7 or 8 member alicyclic ring.

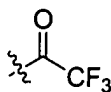
37 (cancelled).

38. (previously presented). A compound according to claim 10, wherein a portion of L that is attached to the ring comprises a moiety selected from the group consisting of:

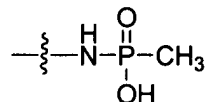


where R_{23} is a C_{1-10} alkyl.

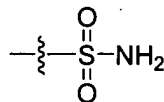
39. (new). A compound according to claim 10, wherein M is



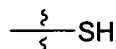
40. (new). A compound according to claim 10, wherein M is



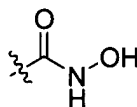
41. (new). A compound according to claim 10, wherein M is



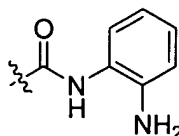
42. (new). A compound according to claim 10, wherein M is



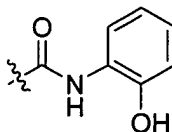
43. (new). A compound according to claim 10, wherein M is



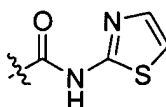
44. (new). A compound according to claim 10, wherein M is



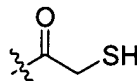
45. (new). A compound according to claim 10, wherein M is



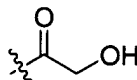
46. (new). A compound according to claim 10, wherein M is



47. (new). A compound according to claim 10, wherein M is



48. (new). A compound according to claim 10, wherein M is



49. (new). A compound according to claim 10, wherein L is substituted or unsubstituted chain of 3-9 atoms connecting the M substituent to the carbon atom alpha to the L substituent.

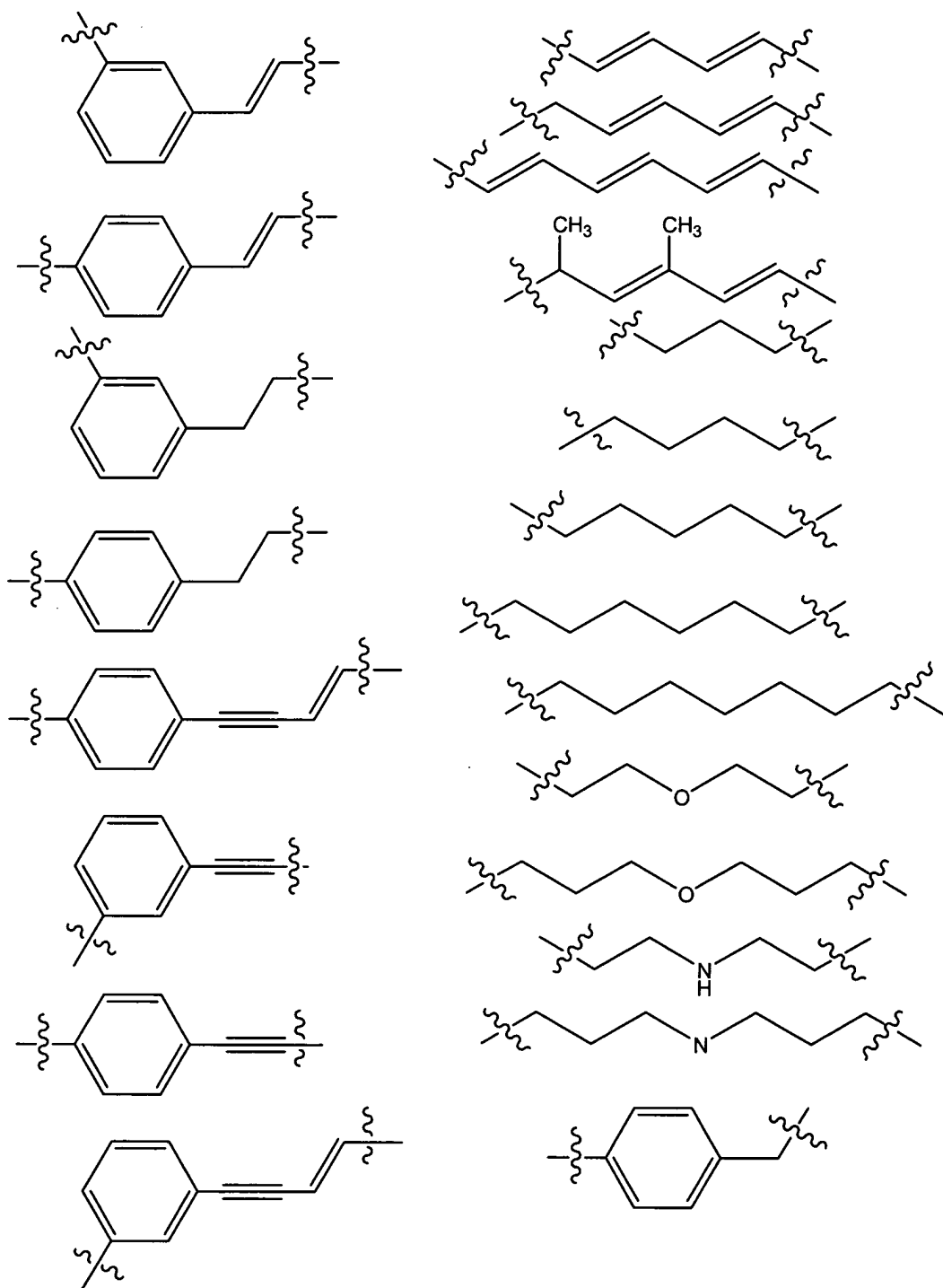
50. (new). A compound according to claim 10, wherein L is a substituted or unsubstituted chain of 4-8 atoms connecting the M substituent to the carbon atom alpha to the L substituent.

51. (new). A compound according to claim 10, wherein L is a substituted or unsubstituted alkyl, alkene or alkyne 3-12 atoms in length as measured between the M substituent and the carbon atom alpha to the L substituent.

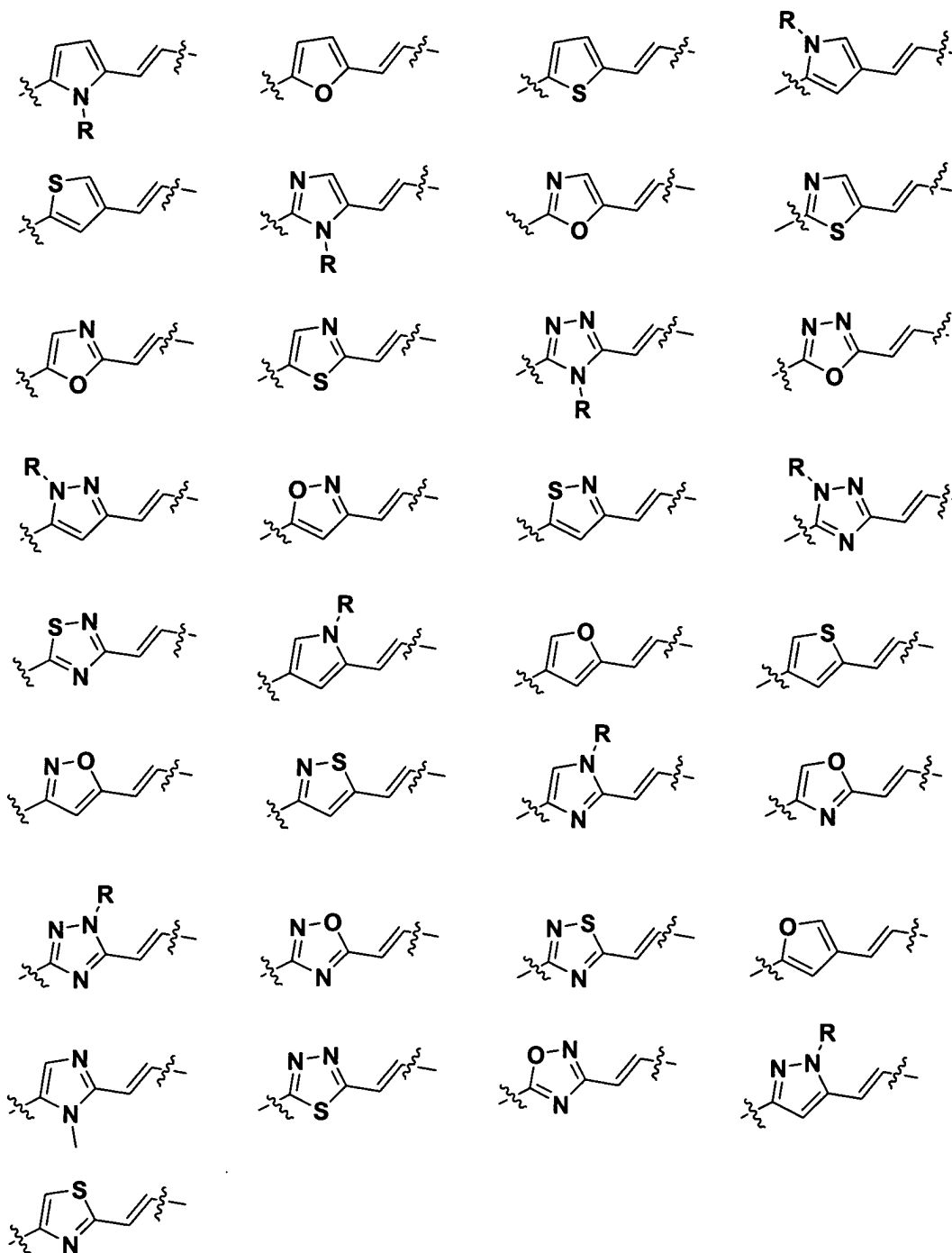
52. (new). A compound according to claim 10, wherein L is a substituted or unsubstituted alkyl, alkene or alkyne 3-9 atoms in length as measured between the M substituent and the carbon atom alpha to the L substituent.

53. (new). A compound according to claim 10, wherein L is a substituted or unsubstituted alkyl, alkene or alkyne 4-8 atoms in length as measured between the M substituent and the carbon atom alpha to the L substituent.

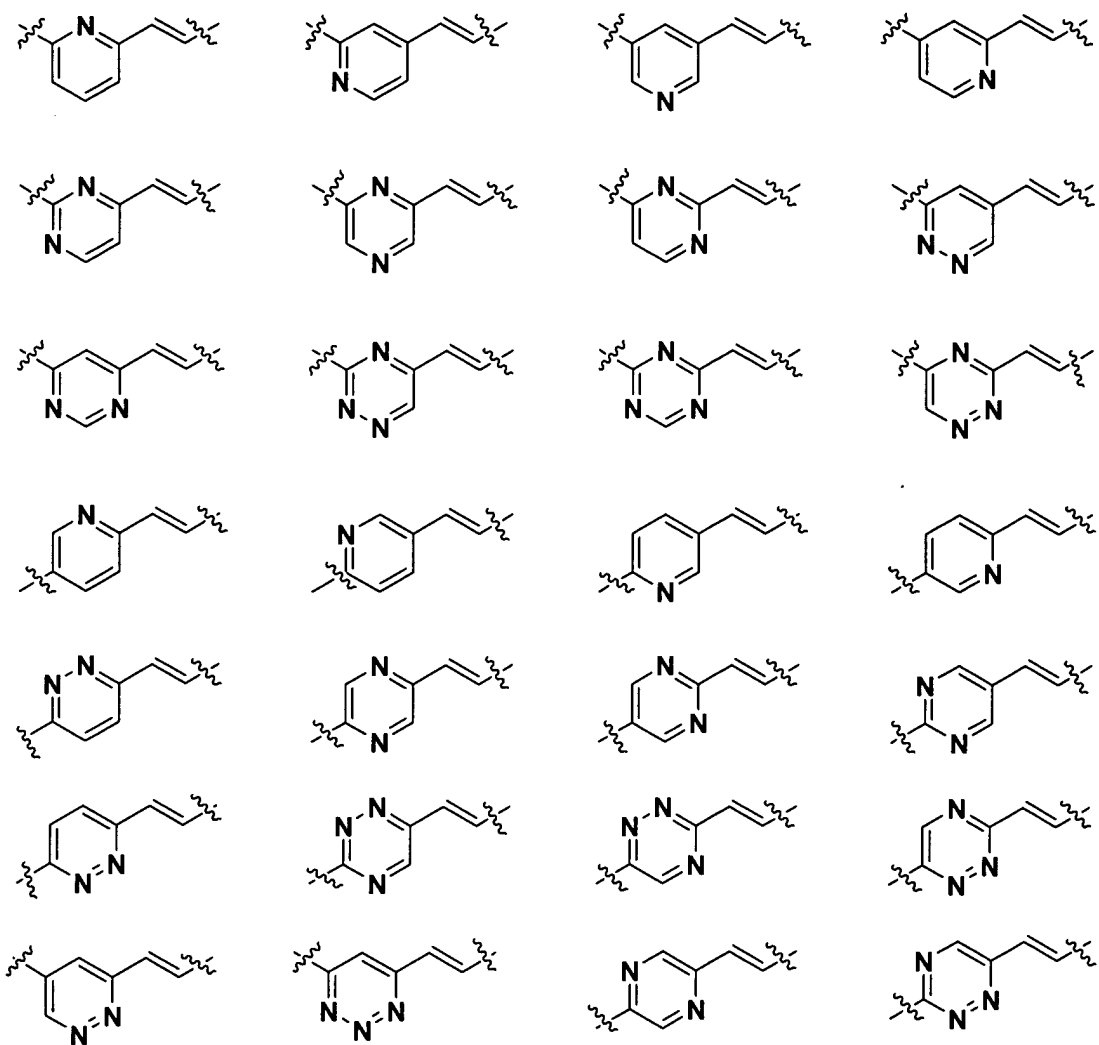
54. (new). A compound according to claim 10, wherein L is selected from the group consisting of



55. (new). A compound according to claim 10, wherein L is selected from the group consisting of



56. (new). A compound according to claim 10, wherein L is selected from the group consisting of



57. (new). A compound according to claim 10, wherein one or more of the atoms of the L substituent in the chain connecting the M substituent to the carbon atom alpha to the L substituent form a three, four, five, six, seven, eight or nine membered ring.

58. (new). A compound according to claim 10, wherein one or more of the atoms of the L substituent in the chain connecting the M substituent to the carbon atom alpha to the L substituent form a portion of a three, four, five, six, seven, eight or nine membered saturated ring.

59. (new). A compound according to claim 10, wherein one or more of the atoms of the L substituent in the chain connecting the M substituent to the carbon atom alpha to the L substituent form a portion of a three, four, five, six, seven, eight or nine membered unsaturated ring.

60. (new). A compound according to claim 10, wherein one or more of the atoms of the L substituent in the chain connecting the M substituent to the carbon atom alpha to the L substituent form a portion of a three, four, five, six, seven, eight or nine membered aromatic ring.

61. (new) A compound according to claim 10, wherein one or more of the atoms of the L substituent in the chain connecting the M substituent to the carbon atom alpha to the L substituent form a portion of a ring selected from the group consisting of cyclopropyl, cyclohexane, cyclopentane, cyclopentene, cyclopentadiene, cyclohexene, cyclohexadiene, phenyl, cycloheptane, cycloheptene, cycloheptadiene, cyclooctane, cyclooctene, and cyclooctadiene.

62. (new) A compound according to claim 10, wherein at least a portion of the L substituent comprises a moiety selected from the group consisting of phenyl, biphenyl-2-yl, 2-bromophenyl, 2-bromocarbonylphenyl, 2-bromo-5-fluorophenyl, 4-*tert*-butylphenyl, 4-carbamoylphenyl, 4-carboxy-2-nitrophenyl, 2-chlorophenyl, 4-chlorophenyl, 3-chlorocarbonylphenyl, 4-chlorocarbonylphenyl, 2-chloro-4-fluorophenyl, 2-chloro-6-fluorophenyl, 4-chloro-2-nitrophenyl, 6-chloro-2-nitrophenyl, 2,6-dibromophenyl, 2,3-dichlorophenyl, 2,5-dichlorophenyl, 3,4-dichlorophenyl, 2-difluoromethoxyphenyl, 3,5-dimethylphenyl, 2-ethoxycarbonylphenyl, 2-fluorophenyl, 2-iodophenyl, 4-isopropylphenyl, 2-methoxyphenyl, 4-methoxyphenyl, 2-methylphenyl, 3-methylphenyl, 4-methylphenyl, 5-methyl-2-nitrophenyl, 4-methylsulfonylphenyl, naphth-2-yl, 2-nitrophenyl, 3-nitrophenyl, 4-nitrophenyl, 2,3,4,5,6-pentafluorophenyl, phenyl, 2-trifluoromethoxyphenyl, 3-trifluoromethoxyphenyl, 4-trifluoromethoxyphenyl, 2-trifluoromethylphenyl, 3-trifluoromethylphenyl, 4-trifluoromethylphenyl, 2-trifluoromethylsulfonylphenyl, and 4-trifluoromethylsulfonylphenyl.

63. (new) A compound according to claim 10, wherein at least a portion of the L substituent comprises a moiety selected from the group consisting of furan, thiofuran, pyrrole, isopyrrole, 3-isopyrrole, pyrazole, isoimidazole, triazole, isoxazole, oxazole, thiazole, isothiazole, oxadiazole, oxatriazole, pyridine, pyridazine, pyrimidine, pyrazine, triazine, benzofuran, isobenzofuran, benzothiofuran, isobenzothiofuran, indole, isobenzazole, quinoline, isoquinoline, cinnoline, quinazoline, naphthyridine, and pyridopyridine.

64. (new) A compound according to claim 10, wherein at least a portion of the L substituent comprises a moiety selected from the group consisting of 4-amino-2-hydroxypyrimidin-5-yl, dibenzofuranyl, benzothiazol-2-yl, 1*H*-benzoimidazol-2-yl, 2-bromopyrid-5-yl, 5-bromopyrid-2-yl, 4-carbamoylthiazol-2-yl, 3-carboxypyrid-4-yl, 5-carboxy-2,6-dimethylpyrid-3-yl, 3,5-dimethylisoxazol-4-yl, 5-ethoxy-2,6-dimethylpyrid-3-yl, 5-fluoro-6-hydroxypyrimidin-4-yl, fur-2-yl, fur-3-yl, 5-hydroxy-4,6-dimethylpyrid-3-yl, 8-hydroxy-5,7-dimethylquinolin-2-yl, 5-hydroxymethylisoxazol-3-yl, 3-hydroxy-6-methylpyrid-2-yl, 3-hydroxypyrid-2-yl, 1*H*-imidazol-2-yl, 1*H*-imidazol-4-yl, 1*H*-indol-3-yl, isothiazol-4-yl, isoxazol-4-yl, 2-methylfur-3-yl, 5-methylfur-2-yl, 1-methyl-1*H*-imidazol-2-yl, 5-methyl-3*H*-imidazol-4-yl, 5-methylisoxazol-3-yl, 5-methyl-2*H*-pyrazol-3-yl, 3-methylpyrid-2-yl, 4-methylpyrid-2-yl, 5-methylpyrid-2-yl, 6-methylpyrid-2-yl, 2-methylpyrid-3-yl, 2-methylthiazol-4-yl, 5-nitropyrid-2-yl, 2*H*-pyrazol-3-yl, 3*H*-pyrazol-4-yl, pyridazin-3-yl, pyrid-2-yl, pyrid-3-yl, pyrid-4-yl, 5-pyrid-3-yl-2*H*-[1,2,4]triazol-3-yl, pyrimidin-4-yl, pyrimidin-5-yl, 1*H*-pyrrol-3-yl, quinolin-2-yl, 1*H*-tetrazol-5-yl, thiazol-2-yl, thiazol-5-yl, thien-2-yl, thien-3-yl, 2*H*-[1,2,4]triazol-3-yl, 3*H*-[1,2,3]triazol-4-yl, 5-trifluoromethylpyrid-2-yl, and the like. Suitable protecting groups include *tert*-butoxycarbonyl, benzyloxycarbonyl, benzyl, 4-methoxybenzyl, and 2-nitrobenzyl.

65. (new) A compound according to claim 10, wherein a portion of the L substituent that is attached to M is meta or para cinnamate.